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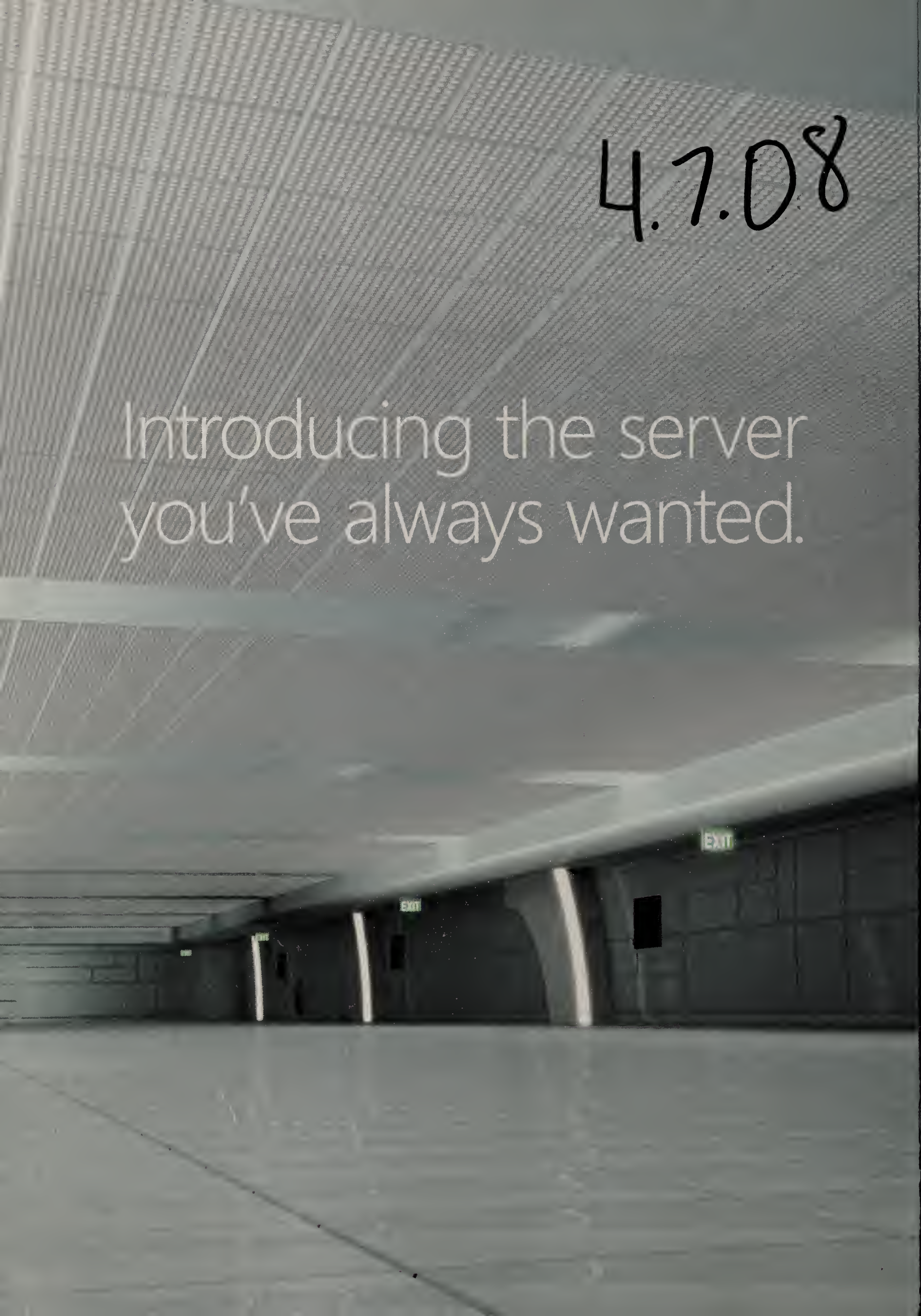

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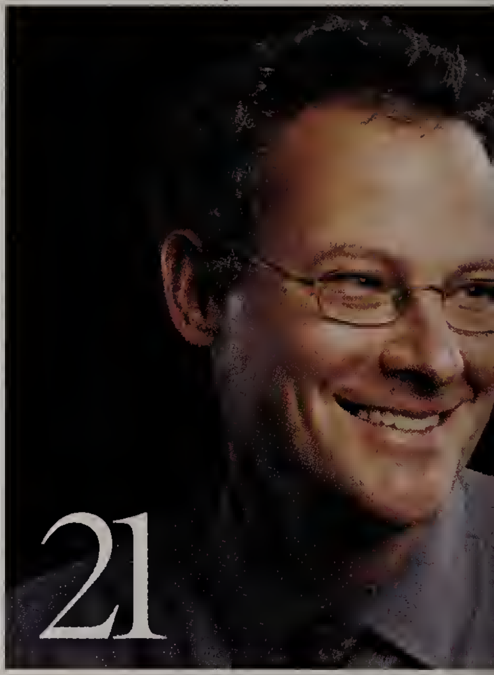
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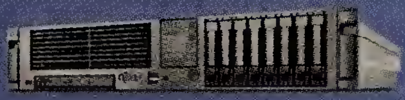

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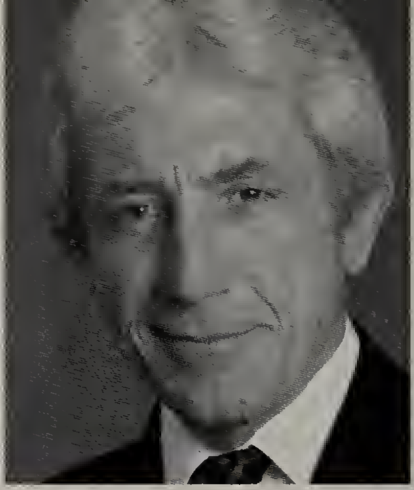
EDITOR'S NOTE

Don Tennant



Emasculating Windows

IF YOU Google the phrase "Microsoft's worst nightmare," the range of hits you get is entertaining for its breadth. Various pundits have proclaimed that the software giant's very worst nightmare is everything from Linux, Google and Firefox to software as a service, Cisco's digital home business and the Sony PlayStation.

They can't all be Microsoft's worst nightmare, so which one earns that distinction? The correct answer is none of the above.

The best way to gain insight into what Microsoft truly fears is to research the musings of Bill Gates. I've had enough encounters with Gates over the years to have recognized that the more he dismisses a competitor, the more he fears it. In 1999, when I asked him how concerned he was about Linux, he blew it off as a "darling of the press" that was nothing more than the equivalent of the first Windows NT kernel.

In a 1995 interview, when I asked Gates for his views on the emergence of Netscape, he derided media interest in the company as an "overreaction" because "an Internet browser is a trivial piece of software." Enlightening as that comment was, there was something else Gates said in that interview that revealed his worst nightmare.

I asked Gates what trend or development had occurred in the technology sector in the past 20 years that really caught him by surprise. His deadpan response: "Kaleida and Taligent had less impact than we expected."

Gates was referring to two software joint ventures formed in the early '90s by Apple and IBM that were already fading into oblivion. There was something different in his tone — a biting sarcasm — that reflected a degree of scorn that he seemed to reserve for the Apple/IBM combo. And it was telling.

Microsoft's worst nightmare is a conjoined Apple and IBM. No other single change in the dynamics of the IT industry could possibly do as much to emasculate Windows.

Buzz about an Apple/IBM merger has arisen cyclically ever since the 1991 formation of the PowerPC microprocessor partnership of IBM, Apple and Motorola. It was especially loud in late 2004, when IBM sold its PC business to Lenovo, seemingly making way for Apple to fill the void. Timothy Prickett Morgan accurately wrote at the time in *The Linux Beacon*, "IBM has the reach to make Apple pervasive; Apple has the means to make IBM cool."

Microsoft's worst nightmare is a conjoined Apple and IBM. No other change could do as much to emasculate Windows.

It really doesn't matter how cool IBM is. But the pervasiveness of Apple is a different story, because a pervasive Apple would be a boon to corporate IT.

As it is, IT shops that are looking at Apple as an alternative to Microsoft are being thwarted by Apple's ditziness in the enterprise. In our "Macintosh Insurrection" cover story in last week's print edition (an earlier version of which can be found online), Robert L. Mitchell wrote about why the insurrection could happen in the enterprise — and why it probably won't.

Mitchell spoke with Dale Frantz, CIO at Auto Warehousing Co., who since last year has been working to migrate his core IT operations from Microsoft to Apple. "The biggest weakness at this point, I'd say, is the lack of a cohesive enterprise strategy on the part of Apple," Frantz said. Mitchell couldn't get anyone at Apple to even talk about its enterprise strategy. (For more on AWC's migration to Macs, turn to page 30.)

The only surefire way for all of that to change is for an IT powerhouse with a dominant enterprise presence to acquire Apple. I wrote in my blog last week about how close Oracle CEO Larry Ellison came to partnering with Steve Jobs to buy Apple in the late '90s, and how that might have transformed Apple into more of an enterprise player.

It's unclear how close IBM has come to acquiring Apple in the past, or how interested it might be now. What is clear is that such a move would be warmly welcomed by a lot of IT shops that hate being dependent on Microsoft. And there's not a more nightmarish scenario hovering over Redmond. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

Affirming the IT Labor Disconnect

Don Tennant wrote that "the fact remains that the competition for IT jobs is a global one, that quality is king and that you're entitled to nothing. The disconnect lies in the failure of too many IT workers to recognize that" ["Entitled to Nothing," Feb. 4].

Several years ago, I was repeatedly jeered when I made similar remarks to Indian IT audiences — that they had to go beyond lowest cost, focus on quality and value for their customers, and move beyond a labor arbitrage situation. The example I used was the old concept of "Made in Japan" as something cheap and tawdry, while today that label conjures up images of high quality and innovative products. Some firms heeded that advice; others have not. Some firms have adopted our work with the eSourcing Capability Models (see *http://itsqc.cmu.edu*), while others have not.

At the end of the day, it is not just about cheap labor and spine-tingling new technologies, but about delivering value to the organization by continually meeting organizational needs in a high-quality manner. That means getting the basic processes in place, controlling costs, performing to plans, and meeting or exceeding expectations in delivering workable solutions time after time.

■ **Bill Hefley,** *associate teaching professor, IT Services Qualification Center, Carnegie Mellon University, Pittsburgh, hefley@cmu.edu*

So here is another IT executive telling you that finding IT labor is still one of his hardest tasks. I can find IT professionals, but they want to work on the next Google application or the next Facebook-type Web site. I am trying to find IT professionals who want to solve business problems or make business improvements using software, but I am finding IT professionals who are enamored of technologies and want to find reasons for using those technologies in a business. I currently have five openings for developers to work with an Oracle database system and write applications on the most appropriate tool to solve the business problems. Having had no luck even though I am using recruiting firms, I am looking at bringing talent in from Latin America; India is about tapped out.

■ **Fernando Gonzalez,** *CIO, Byer California, San Francisco, fgonzale@byer.com*

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Virtualization Shakes Up Backup Strategy

Three popular approaches combine pieces of traditional and well-understood enterprise backup with some elements that are unique to the virtualized world.

Windows XP SP3: The Improvements Are Under the Hood

When Microsoft finally releases Windows XP Service Pack 3, the security enhancements included will make it worth the download, Preston Gralla reports.

Six Free BlackBerry Apps

These top-notch applications can improve the lives of mobile BlackBerry users. And better yet, they're free!

Security Policy 101: Basic Mistakes

Anton Chuvakin spotlights five fundamental errors in security policy planning and implementation.

Will the FAA Ban Laptop Batteries?

Laptop batteries explode. It's only a matter of time before it happens in-flight. Then what? Mike Elgan wonders.

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News Digest

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THE WEEK AHEAD

MONDAY: The O'Reilly Emerging Technology Conference starts in San Diego, along with a companion event focused on the business and technology aspects of social networks.

MONDAY: Microsoft begins a conference on its SharePoint collaboration software in Seattle. On Wednesday, the vendor's Mix08 Web developer conference starts in Las Vegas.

TUESDAY: CeBIT 2008, the world's largest IT trade show, opens in Hannover, Germany. It runs through next Sunday.

HARDWARE

IBM Calls New Mainframe 'Most Powerful' Business System Yet

IBM TOUTS its new System z10 mainframe as a "commercial supercomputer" and "the world's most powerful enterprise computer," among other superlatives. And the company hopes the machine can gain some geek street cred with features such as a quad-core processor that runs at a clock speed 2.6 times faster than the chips in IBM's three-year-old z9 model can manage.

The z10, which was introduced last week at a press conference in New York, is imperial in stature, with a height of 80 inches and a maximum weight of more than 5,000 pounds.

The system certainly has its ooh-and-ahh elements, including its 4.4-GHz processor. The new mainframe also supports up to 1.5TB of available memory per system and InfiniBand data rates of up to 6GB/sec., more than two times faster than the rate on the z9.

IBM said that the z10 is designed to run up to 50% faster than the z9 overall and that it can deliver as much as double the performance on CPU-intensive applications.

IBM says the System z10 can help IT managers avoid the need to add more data center space.

Upfront cost continues to be a potential issue for the mainframe line. IBM didn't disclose specific pricing but said that the z10 starts at less than $1 million and can cost in the multiple millions for a fully loaded system with 64 physical processors.

However, IBM claimed that the z10 can handle the same processing workload as nearly 1,500 x86 servers.

The company pointed to the new system's ability to help IT managers solve the problem of server sprawl — and the resulting strain on data center power and cooling systems — as an economic justification for continued investments in mainframes by users.

Many companies "are about to hit a wall," said Rod Adkins, senior vice president of development and manufacturing in IBM's systems and technology group. He added that the z10 can enable users to "innovate within an existing data center envelope" instead of expanding their IT facilities.

That already was the case at Nationwide Mutual Insurance Co., which uses a z9 system, said Buzz Woeckener, an IT manager in the insurer's shared-services unit. Nationwide runs 484 virtualized servers on its z9. As a result, Woeckener said, it will be able to delay until 2010 a planned data center expansion that was initially expected in 2006 or 2007.

"It significantly pushed out that major investment," Woeckener said. He added that the insurance firm hasn't decided yet whether it will upgrade to a z10.

Richard Partridge, an analyst at consulting firm Ideas International, said the performance jump offered by the z10 should be enough to "slow down anybody who was thinking of abandoning the mainframe because they thought it was too sluggish."

— *Patrick Thibodeau*

HEALTH CARE

Subsidy Cuts Hurt, Say CIOs

PROPOSED CUTS in health care subsidies are weighing heavily on IT executives who are scrambling to beef up hospital security and electronic medical records systems that could help reduce medical errors.

About 43% of 307 health care industry IT managers surveyed between Nov. 20 and Jan. 20 by the Healthcare Information and Management Systems Society (HIMSS) listed managed-care fee reductions and Medicare cutbacks as the biggest of five issues that will harm health care in the next two years.

- **About 75% of survey respondents said they expect their IT budgets to increase this year. And 68% predicted that the number of full-time IT workers will increase as well.**

"Health care costs are eating us alive in this country, and the situation will get worse before it gets better," said John Wade, CIO at Saint Luke's Health System Inc. and chairman of the HIMSS.

The survey results were released last week.

– MATT HAMBLEN

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SECURITY

Security Firm Discovers Database With Stolen FTP Server Credentials

AN ILLEGAL database discovered by IT security vendor Finjan Inc. provides yet another example of how easy it's becoming for almost anyone to get their hands on information that enables them to break into or infect systems supporting corporate Web sites.

ISTOCK

Finjan announced last Wednesday that the database contains more than 8,700 FTP server credentials belonging to companies worldwide, including about 2,500 businesses in North America.

Yuval Ben-Itzhak, Finjan's chief technology officer, said that the database was being hosted on a server in Hong Kong, although all of its contents were in Russian. The stolen credentials listed usernames, passwords and the IP addresses of FTP servers, he said, adding that all of the information was openly available for purchase.

With the FTP credentials, malicious attackers would be able to break into servers or upload malware to them, Ben-Itzhak said.

He added that attackers could buy credentials based on the countries in which the FTP servers are located or the Google rankings of the Web sites they support.

But Finjan said on Friday that the server hosting the database was no longer connected to the Internet. The firm had notified the ISP that was supporting the server about the database.

Finjan found the database while checking Web traffic with its code inspection tools. Ben-Itzhak said all of the stolen FTP credentials seem to have been harvested using Trojan horses and other malware.

A newly updated version of a hacking tool kit called NeoSploit was also being offered for sale. NeoSploit enables cybercrooks to automatically inject iFrame tags into Web pages on compromised servers. The tags can then be used to surreptitiously pull in malicious code from other Web sites, Ben-Itzhak said.

Matt Kesner, chief technology officer at law firm Fenwick & West LLP, said that FTP isn't a particularly secure protocol to begin with. That's one of the reasons why Fenwick & West doesn't use it, he noted.

Despite FTP's ease of use, Kesner suggested that other companies also shouldn't allow FTP servers on their networks. "That's easier said than done," he acknowledged. "Business pressures require all of us to make security compromises. We just don't think allowing FTP is a very good compromise."

— *Jaikumar Vijayan*

Short Takes

- U.S. and Canadian law enforcement authorities have seized more than $78 million worth of counterfeit **Cisco Systems Inc.** networking equipment in an ongoing investigation into imports from China, the **U.S. Department of Justice** said.

- Ross Philo, formerly **Cisco**'s director of global energy solutions, has been named executive vice president and CIO of the **U.S. Postal Service**. He was previously CIO at **Halliburton Energy Services**.

- **Oracle Corp.**'s proposed $8.5 billion acquisition of **BEA Systems Inc.** has been approved by the **U.S. Department of Justice** and the **Federal Trade Commission**. The deal still needs European Commission approval.

- **VMware Inc.** acknowledged that a critical flaw in its virtualization software for Windows lets attackers escape the "guest" operating system and modify or add files to the underlying "host" software. The bug is in the shared-folder feature of the client software.

STORAGE

EMC Confirms Hefty MozyPro Price Hike

ISTOCK

EMC CORP. last week disclosed that the price of its hosted MozyPro backup and recovery service for two servers was to increase substantially on March 1. EMC officials said all MozyPro users were informed over the past couple of weeks that the company was changing from a single licensing model to separate schemes for desktop and server systems.

"If you were a Mozy customer for a while, you may see this as the other shoe dropping," said Doug Chandler, an analyst at IDC. "Such users may be saying, 'We were afraid of this, and now it's happening.' Some customers [may now] look for another service."

But, Chandler added, "from EMC's side, I can't say I'm surprised. Servers and PCs are different animals. A single license across all systems is not practical."

EMC said that the existing contracts of MozyPro licensees will be honored and that those users have 30 days to buy additional storage capacity under the former list prices.

EMC gained the MozyPro storage services last year with its purchase of Berkeley Data Systems Inc. and has already started adding its own technology to some of the products.

"These services are going to take a real amount of investment to [provide] the availability and service levels that businesses need," Chandler said.

Monthly fees increased from $8.95 to $24.45 for a single MozyPro server license and 10GB of storage and from $329 to $1,014 for 20 servers and 500GB.

- BRIAN FONSECA

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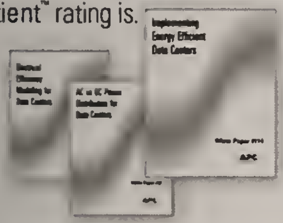

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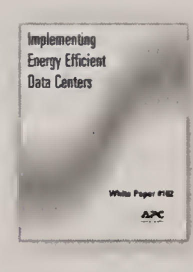

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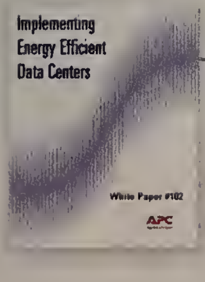

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Real-World Hospital Makes Virtual Debut in Second Life

PALOMAR Pomerado Health last week opened a brand-new, state-of-the-art hospital — in Second Life.

The opening of the virtual hospital follows the December 2007 ground-breaking for the health care provider's real-world $773 million, 600-bed Palomar Medical Center West in Escondido, Calif.

With completion of the first phase of that hospital still three years away, PPH created the facility and all of its technology in the Second Life virtual world to show its 900,000 clients in Southern California what is to come.

"You can show people pictures and talk about it, but this virtual world technology enables people [to] experience the environment on their own," said Orlando Portale, PPH's chief technology and innovation officer. A virtual RFID-enabled bracelet will guide visitors through floors and rooms, where "they can play with the technology," he added.

The Second Life hospital shows off operating rooms equipped with robotics technology and functional imaging systems that support medical procedures such as cardiovascular surgery.

The virtual facility uses Cisco Systems Inc.'s TelePresence video collaboration technology.

Shore Communications Inc. analyst John Blossom expects that businesses will increasingly turn to virtual worlds like Linden Research Inc.'s Second Life to get user feedback on products. "It's a cost-effective method — much better than just herding people into a room for a focus group," he noted.

— *Sharon Gaudin*

BETWEEN THE LINES

By John Klossner

The all-new, agile, responsive software vendor gets its first chance to respond to user feedback...
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BENCHMARKS LAST WEEK

Sun Microsystems Inc. completed its $1 billion acquisition of open-source database vendor **MySQL AB**, six weeks after announcing the deal.

Market research firm **Gartner Inc.** reported that **Hewlett-Packard Co.** bought $15 billion worth of semiconductors last year, more than any other company worldwide.

ONE YEAR AGO: Oracle Corp. said it planned to buy Hyperion Solutions Corp. for $3.3 billion, beginning a wave of acquisitions of business intelligence companies by top IT vendors.

Global Dispatches

Microsoft Hit With Another Big Fine

BRUSSELS – The European Commission last week hit Microsoft Corp. with a fine of €899 million ($1.4 billion U.S.) for what it called a continued failure to honor the provisions of a 2004 antitrust ruling.

EC Competition Commissioner Neelie Kroes said Microsoft was fined again "for a clear disregard of its legal obligations." She called the move "a reasonable response to unreasonable actions."

Europe's top competition authority had already fined the company €777.5 million ($1.2 billion) – €497 million ($750 million) in the 2004 ruling, plus an additional €280.5 million ($423 million) for noncompliance.

Microsoft said it is reviewing the action and that the latest fines "are about the past issues that have been resolved."

Paul Meller and Peter Sayer,
IDG News Service

Wipro Plans Big China Expansion

SHANGHAI – Wipro Ltd. plans to increase its workforce in China to 2,000 over two years, Chief Operating Officer A.L. Rao said last week.

The Bangalore, India-based company currently has about 200 workers in its Shanghai-based Chinese operation.

"We would like to see China as another resource for talent and to set up development centers there and maybe go after Chinese clients," Rao said during a press conference at the Foreign Correspondents' Club of Japan in Tokyo.

Most of the company's current business in China is with non-Chinese companies with operations in the country.

Martyn Williams,
IDG News Service

BRIEFLY NOTED

The Australian Department of Defence has awarded Unisys Corp.'s Australian subsidiary a contract worth $240 million Australian ($225 million U.S.) to support servers, security systems and more than 100,000 desktop systems spread across 460 locations around the country.

Sandra Rossi,
Computerworld Australia

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Microsoft Tries to Steer a More Agile Development Course

ISTOCK

The software vendor has changed some of its internal software development processes in an effort to become less rigid and more responsive to user feedback. But is it working? **By Eric Lai**

MICROSOFT CORP. may be the world's largest software vendor, but it would also top most tallies of crimes committed against good coding practices.

Microsoft rarely catches a break from its critics, whether it's for shipping software too late or too early, releasing products that are too insecure or too locked-down, making too few changes or too many, or writing code that is bloated and overly complicated or excessively dumbed-down.

Obviously, it's not that Microsoft lacks for talent among its 31,000 developers. But the sheer size of the company's programming workforce and the number, heft and widespread popularity of its products combine to create an environment that may not always be conducive to efficient coding.

If you believe executives within Microsoft's server and tools division, though, the software vendor has become a much more agile and responsive developer over the past few years.

Within that unit in particular, Microsoft has embraced new tactics to try to help its programmers get products to market faster while writing better code and incorporating changes suggested by early users.

That includes steps such as gathering feedback from users before writing any code and creating independent "feature crews" that can quickly build specific features. Microsoft has also replaced or augmented the conventional model of alpha and beta releases with its Community Technology Preview (CTP) program, which uses a "release early, release often" approach to testing software.

"We just realized that we're building products for customers, not just for technology's sake," said Soma Somasegar, senior vice president in charge of Microsoft's development tools. "So the sooner we could engage with our customers, the better we could make it from an architecture, feature, quality and scalability perspective."

The transformation, which began four years ago, culminated last Wednesday when Microsoft formally launched the 2008 versions of Windows Server, SQL Server and Visual Studio — each of which was developed using some or all of the new approaches.

Skeptics still abound. For one thing, they point out that despite Microsoft's newfound commitment to user feedback and development flexibility, the company didn't manage to actually release the three new products simultaneously.

Visual Studio 2008 has been available since November, while Windows Server 2008 was released to manufacturing (RTM) last month. Meanwhile, the RTM on SQL Server 2008 has been delayed until the third quarter, one quarter later than planned — although Microsoft did issue what it called a "feature-complete" CTP release on Feb. 20.

"Aligning the launch date was a PR exercise," said Greg DeMichillie, an analyst at Directions on Microsoft in Kirkland, Wash. DeMichillie, who worked as a developer at Microsoft for 10 years, is also unconvinced that the company is now a paragon of agile and flexible development.

"Clearly, CTPs and the other changes deliver a benefit," he said. "Users get earlier glimpses of products, and Microsoft gets feedback earlier. But the jury is still out on whether Microsoft is going to ship software more quickly and reliably as a result."

John Andrews, CEO of Evans Data Corp., a development tools market research firm, said via e-mail that the complexity and size of Microsoft's code base prevents the company from truly adopting agile development concepts. "Now it's a matter of making itself semi-agile wherever possible," Evans wrote.

But Microsoft officials argue that being agile has less to do with shaving some time off of a shipment schedule than it does with being able to deliver higher-

Continued on page 16

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All Popular Endpoint OSs Supported	Yes	Blind	Blind	Huh?	Blind
Number of Administrators Required	1	Dozens	Dozens	Dozens	Dozens
Number of Servers Needed	1	Acres	Acres	Acres	Acres
Number of Agents/Consoles/Toolsets	1	Lots	Lots	Lots	Lots
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Continued from page 14

quality software in the first release of a product.

To try to meet that goal, the SQL Server and Visual Studio development teams have switched over completely to CTPs, which are interim builds that let Microsoft get feedback from users more quickly than it can with full-fledged beta releases. For instance, the CTP release of SQL Server 2008 that became available last month was the sixth issued for the new database thus far.

Another key element of Microsoft's development process is its Technology Adoption Programs (TAP), which let corporate users get extensive hand-holding from the software vendor as they test and then go live with beta or CTP releases in production environments. Microsoft gathers both informal feedback and more quantitative survey-type data from TAP participants, said Rich Kaplan, a vice president in its customer service and support unit.

Some users who have worked with the prerelease versions of the new products said that they have noticed an increase in responsiveness and flexibility on the part of Microsoft.

"Almost everything that we asked for while testing SQL Server 2008 is now in the final product," said Umit Nazlica, database systems manager at Garanti Bank, a banking and financial services firm in Istanbul, Turkey, that is taking part in the TAP for the new database.

For instance, IT staffers at Garanti requested stronger resource management and governance capabilities, as well as data-compression and -encryption improvements, Nazlica said.

The bank, which runs 140 instances of Microsoft's database with a total of 11TB of data, also participated in the TAP for the current SQL Server 2005 release. The testing process has been much better this time around, according to Nazlica. "We had a lot more time to evaluate the product," he said. "And we were more experienced about how to work directly with the people at Microsoft."

Microsoft's developers "are listening and really take into account what is said," said Michael Ruminer, a Boston-based software development consultant at Magenic Technologies Inc. "They don't take on hubris in the product development area that they know best."

Ruminer, who has also been designated a Microsoft Most Valuable Professional, said that when he talks to developers at the company, he gets the sense that their managers are working to remove needless process requirements and other obstacles. And he said that Microsoft made significant improvements to the Visual Studio testing suite after outside developers complained about it — a step that he sees as evidence of its increased responsiveness.

He did add, though, that there is "a lot of discussion about whether Microsoft is actually pushing out CTPs too quickly." That leaves some users and third-party developers feeling overwhelmed, Ruminer said. But to him, the upsides outweigh the potential negatives. "No one is forcing you to install the CTPs," he noted.

FORMER PHILOSOPHY

In the past, Microsoft adhered to a zero-defect development philosophy, according to DeMichillie. Under that approach, the company's development teams had to fix bugs before writing any new code, on the theory that doing so would cost less in both time and money than addressing problems later in the development process would.

Nor did Microsoft actively seek out development advice from users. "Until about three or four years ago," Somasegar said, "our philosophy for the most part was, 'I know what I'm building is right for you.' "

"And the feedback that we wanted was, 'Here are some bugs,' " added Bill Laing, general manager of the company's Windows Server division. "It wouldn't change the product."

In addition to adopting CTPs, the Visual Studio and SQL Server teams have tried to eliminate siloed teams of developers, testers and customer support workers wherever possible, Microsoft officials said. Both groups have implemented the feature-crew model, with smaller teams of five to 12 employees — typically a program manager and a few developers and testers.

Somasegar said that using a feature-crew approach, he was able to fast-track the development of some Visual Studio 2008 features related to building Office 2007 applications. That allowed them to be released in a service pack update for Visual Studio 2005 at the same time that the new desktop suite was released early last year.

Not everything fits perfectly into the CTP model. The interim releases aren't supported as extensively by Microsoft as full betas are. As a result, the Windows Server group used a combination of betas and CTPs during the development of Windows Server 2008, and Laing said it will continue to rely on formal beta releases.

"I think it's a much bigger thing for a tester to roll out a piece of infrastructure like Windows Server," he said, adding that his team hopes that the higher level of support for betas will encourage users "to actually go into production with them."

The beta release cycle during the development of Windows Server 2008 "was just right" for Continental Airlines Inc., said Dawn Getteau, a systems architect at the Houston-based airline. Continental deployed a beta version of the operating system in its production environment. But first, Getteau said, the IT staff had to "go through our change management, testing and validation process," which can take more time than a CTP schedule might allot. ■

> **"The jury is still out on whether Microsoft is going to ship software more quickly and reliably.**
>
> **GREG DeMICHILLIE,**
> ANALYST, DIRECTIONS ON MICROSOFT

> **"Almost everything that we asked for while testing SQL Server 2008 is now in the final product.**
>
> **UMIT NAZLICA,**
> DATABASE SYSTEMS MANAGER, GARANTI BANK

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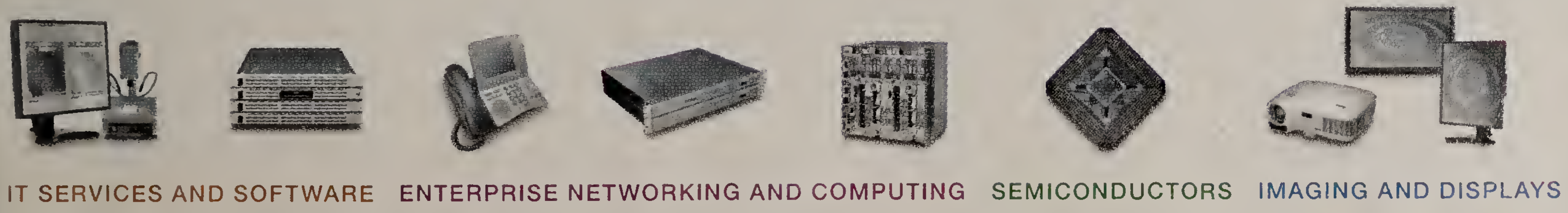

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IT Deputized To Help Take A Bite Out Of Crime

More cities are using mobile and wireless technologies to enforce parking laws and aid in crime-fighting efforts.

By Matt Hamblen and Patrick Thibodeau

A parking enforcement vehicle outfitted with a drive-by scanning system.

IN AN INCREASING number of U.S. cities, ramping up crime-fighting efforts is no longer just a case of putting more feet on the street. They're also putting mobile and wireless technologies on the street — literally — in order to help deter criminals and identify scofflaws.

For example, the local government in West Palm Beach, Fla., said last week that it has installed a wireless video surveillance network to give its police department a digital eye on city neighborhoods.

In the initial rollout, which was done in January, 13 video cameras connected to 17 wireless mesh nodes were trained on some of the city's most crime-ridden areas, enabling police to electronically look for gang activity, drug dealing, prostitution and other crimes.

The mesh nodes connect to police headquarters and provide dispatchers with real-time video streams, according to network vendor Firetide Inc. In addition, each node is coupled with a Wi-Fi access point that enables police officers patrolling the streets to access the video feeds via laptops mounted in their cruisers.

Lois Frankel, West Palm Beach's mayor, said she isn't worried that the wireless surveillance network will generate bad publicity for the city, which openly acknowledges that it has a crime problem. "We have only gotten positive feedback, and people like having the cameras," she said.

In fact, the city, which has a population of about 100,000, is launching a program dubbed City-Cam that is aimed at increasing the number of cameras in the network through partnerships with businesses and homeowners' associations. With police training and supervision, civilian volunteers will monitor the video feeds and notify dispatchers of any incidents they spot.

Reaching out to the public is a financial necessity, Frankel said, because the city can't afford to buy all of the cameras it needs.

Police departments elsewhere also are having to make do with whatever resources cash-strapped municipal governments can spare.

For example, Framingham, Mass., which has about 67,000 residents, is deploying a townwide Wi-Fi mesh network so its laptop-equipped patrol cars can be online at all times. But for now, police officers have to drive to public Wi-Fi hot spots to transmit reports via a virtual private network.

Drive-by scanning systems are another technology that more local governments are starting to rely on. The car-mounted systems can be used to find stolen vehicles and identify autos that have exceeded parking time limits or belong to people who haven't paid taxes or parking tickets.

To monitor parking spaces that have specified time limits, Fredericksburg, Va., is using a system developed by Tannery Creek Systems Inc. that can check two cars per second via cameras that scan their license plates and their shapes. A GPS device digitally marks the location of a car, and the system checks the next time it goes by to see if the driver has overstayed his welcome.

The District of Columbia's Department of Transportation, or DDOT, began using technology from Elsag North America two years ago to search for parking-ticket scofflaws. That system uses infrared cameras to scan license plates, which are checked against a database stored on a laptop PC.

Mike Belak, the DDOT's CIO, said officials are exploring the idea of adding real-time wireless communications capabilities to the camera-equipped vehicles.

Separately, Belak is testing parking enforcement systems from three vendors. The DDOT hopes to use one of the systems to increase the productivity of its enforcement officers, he said.

But technology is no panacea. In West Palm Beach, Frankel said, the wireless surveillance network is only one part of a wider crime-fighting initiative that also includes hiring more police officers. "The cameras are just a tool," she said, "not a replacement for anything." ■

David Ramel *and* **Ian Lamont** *contributed to this story.*

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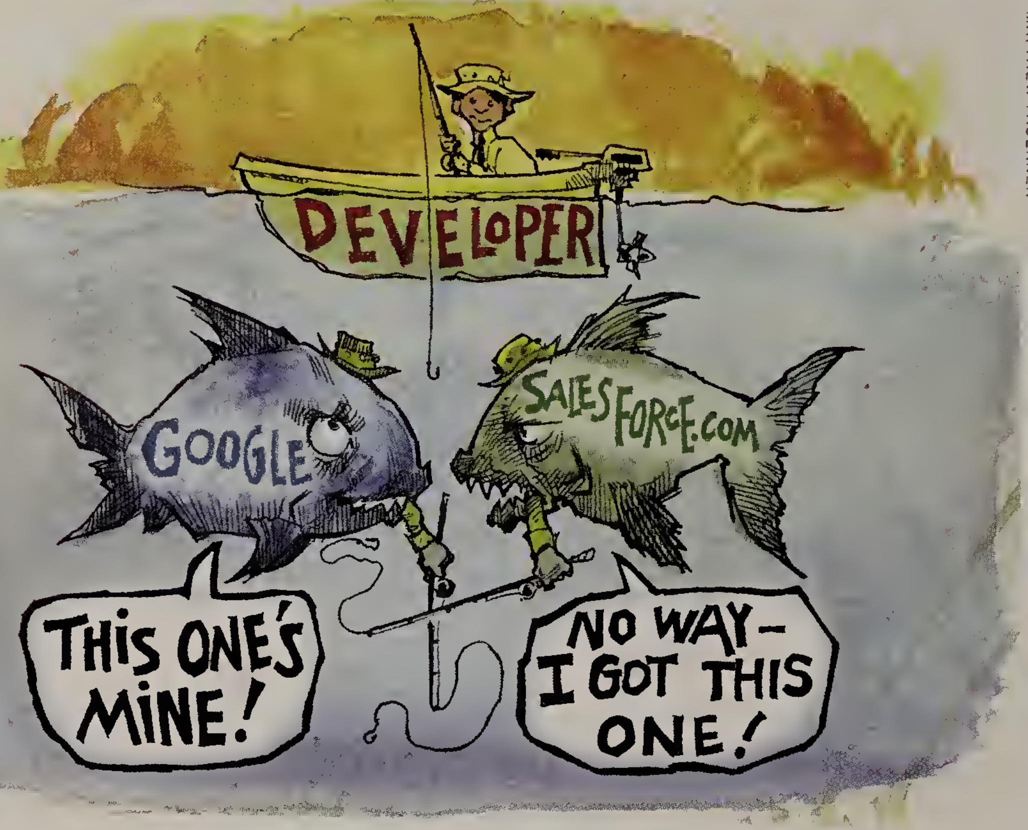
On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ **BY MARK HALL**



MATTHEW FAULKNER

Google vs. Salesforce.com?

IT'S AN understatement to say that Salesforce.com Inc. has changed the nature of enterprise software forever. The San Francisco-based company's software-as-a-service model upended the notion that business software needs to run on premises and under the direct management of IT. Today, 1 million users at more than 38,000 companies work with Salesforce.com's applications. And, reports Chief Marketing Officer Clarence So, the company is on track to do $1 billion in revenue in its current fiscal year. But that might be just the tip of a potential iceberg of change in the way IT is done.

So: Salesforce.com is bigger than CRM.

The next "big bet," says So, is to position Salesforce.com as a "platform as a service" company — much as Google Inc. is trying to do with its Google Apps. As savvy CIOs see that managing IT infrastructure is seldom core to a business, they no longer want to be seen as "chief infrastructure officers," So argues, but rather as "chief innovation officers," plotting new business processes that leverage external SaaS infrastructures. Both Salesforce.com and Google want to be the external "infrastructure platform" CIOs adopt. Although Google has the bigger brand and bank account, Salesforce.com might be the better bet, says So. Its AppExchange already offers a breadth of applications — everything from groupware to project management. Plus, it already has users who view Salesforce.com as a platform and not as a single-app SaaS provider. For example, So says that Japan's postal service recently signed a 30,000-seat deal, not for sales force automation software, but merely for the right to customize the service in the SaaS cloud for its own purposes. So contends that it's similar to what Microsoft Corp. was able to do in the mid-1980s: convince IT that Windows was solid enough to build applications and business processes on. And that worked out well.

Hypermesh Speeds Streaming Media

True streaming media is on its way, says **Ryan.**

If you enjoy streaming media from video sites like YouTube, Scott Ryan has a real treat for you: the "hypermesh." Ryan is the CEO of Atlanta-based start-up Asankya Inc., which will roll out its "packet-level multipathing" (PLMP) technology in 10 U.S. urban areas in Q2. He contends that "progressive download" sites such as YouTube can't handle live media events or high-definition streams because the content flows through a single path via a local caching server to your PC. Ryan claims that PLMP can send the same data stream over multiple paths to ensure that it gets the maximum content-delivery rate. PLMP depends on Asankya's giganode caching devices in ISP data centers, and on a softnode plug-in that you install on your Windows XP system. (Vista support arrives later this year, but the Mac OS X softnode won't ship until 2009.) The softnode, which Ryan hopes someday will be standard in PC operating systems, augments the giganode in the cloud and acts like a peer-to-peer agent, so that machines with the plug-in can pass along a data stream to the next-closest content requester. Ryan says all the nodes for a given streaming session are tracked in a central pathing table, which is updated in real time so service rates achieve the highest throughput. And PLMP is secure, he says, since the pathing table holds no file-level information about a PC, only its location on the content path. The technology, which stems from research at Georgia Tech, will be worth a serious look when it arrives. ■

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PHOTOS BY JASON GROW

THE GRILL

Nicholas Carr

The guy IT loves to hate talks about fundamental shifts in technology, the vendor community and how computing gets done.

Dossier

Name: Nicholas Carr

Location: New England

Least favorite technology: Cellular telephony

Favorite social networking site: "Any decent restaurant."

First job: Proofreading church newsletters

Last book read: *Straw Dogs*, by John Gray

Most prized possession: His corkscrew

Favorite movie: *Pat Garrett and Billy the Kid*

Personal philosophy: "I like the Emily Dickinson line, 'Tell all the truth but tell it slant.' "

Regrets: "The first car I ever bought was a Renault. Big mistake."

Nicholas Carr, of "IT Doesn't Matter" fame, has written a new book, The Big Switch: Rewiring the World, From Edison to Google *(W.W. Norton, 2008).*

What is this big switch you see coming? I think we're at the early stages of a fundamental shift in the nature of computing, which is going from something that people and businesses had to supply locally, through their own machines and their own installed software, to much more of a utility model where a lot of the computer functions we depend on are supplied from big, central stations over the Internet.

It's analogous to what happened to mechanical power 100 years ago, when electric utilities changed the nature of that resource and how businesses and people used it and received it.

How did you come upon the electricity analogy for computing? It struck me that the kind of radical shift that businesses had to go through when they decided to close down their waterwheels or steam engines at their factories and trust an outside supplier reflected the kind of upheaval that people feel in computing when they begin to trust outside suppliers.

> **I think we're at the early stages of a fundamental shift in the nature of computing.**

You refer to both electricity and information technologies as general-purpose technologies. But processing is done in so many different ways and for so many different purposes. Is it really as general as you make it out to be? The analogy between electricity and information technology works at an economic level pretty well, I think. When you start looking at a technological level, you see that there are, of course, major differences, and I'm not arguing that IT is like electricity in some fundamental technological way.

The main difference is that IT is extremely modular in a way that electricity wasn't. With the electric utility, they produced [and] transmitted the power, and then everything on your side of the electric socket was your responsibility. With IT, all of the functions can be considered as individual modules. Raw processing can be done either locally or over the Net; data storage, same thing. And all the applications — unlike electricity — can also be supplied either locally or over the grid.

Do you think corporate IT departments will shrink? I think over the long term they will. I think this is a shift, like we saw with electricity, [over] a decade or two, particularly for larger companies.

A lot of the jobs that are inside IT departments today, in fact the majority, are related to maintaining the internal assets — the machinery and the software that runs locally. Over time, those kinds of jobs will move from inside companies to the supplier side.

Is the same thing true for some of the vendors? Yes, definitely. There are a couple of trends here. One is the supply of IT — whether it's raw computing, data storage or applications centrally — which will tend to expand the workforce on the supply side. On the other hand, we're seeing a fast move to more automated IT services through virtualization and other trends, which will push down the labor requirements. So we have two opposing but very tightly related trends.

If companies are starting to use the Internet for data processing, is security a huge problem? I don't think it's a huge problem. The onus is on the suppliers to prove their reliability and security and earn the trust of the buyers. But ultimately the utility model will offer greater security than we have today, because today our IT system is incredibly fragmented. Some companies and some individuals are very attuned to security and are very good at it, and others aren't.

A lot of failures of security aren't because of some central failure; they're because of individual failures in taking appropriate care. As we move toward more of a utility model, and more and more data is supplied from big utilities whose entire existence depends on maintaining a high degree of security, I think we'll ultimately see more secure data.

Electric utilities have tended to be highly regulated. Do you see the same thing happening with computing? Originally, I thought the modularity of computing implied that we could have a very diverse set of suppliers whose services would be joined together through industry standards. So my initial imagination of the utility industry was of a lot of different companies doing different specialized things and competing with each other in a way that you don't see with electricity, which tends naturally to become a local monopoly. There's no reason that computing needs to be a local monopoly, since you can supply these things in many different ways from many different places.

More recently, though, I think we've seen pressures to centralize and build utility data centers of really massive scale, which requires a lot of money and a lot of expertise. That implies that we'll see a great deal of centralization in the industry. If that does come true, if we have monopolies or oligopolies begin to form, I think inevitably we'll see more governmental regulation the way we see with other utilities.

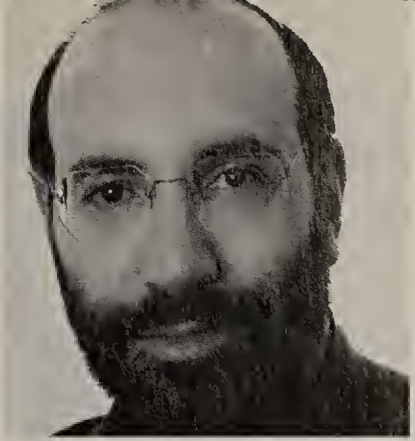
You claim that there was a democratizing effect from the electric grid. Do you think the same thing will be true from the computing grid? Yes. Once you start computing as shared services, you can gain great economies of scale and you can push down the price of computing, even as you expand the availability.

The great advantage of this model is probably for smaller companies, which have been at a disadvantage because they haven't been able to build big data centers or put into place big ERP systems. As soon as you move to the utility system, you suddenly level the playing field and allow smaller companies to tap into the same kind of sophisticated computing operations that have been available to larger companies.

– *Interview by* **Joyce Carpenter**

■ **OPINION**

Michael Gartenberg



Vista, the Sushi of Operating Systems

ACCORDING TO an old industry joke, IBM was once so poor at marketing that if it had invented sushi, it would have called it "cold, dead, raw fish." This occurs to me because I've been thinking of Microsoft's Vista as the sushi of operating systems.

I'll explain what I mean by that, but first I have to wonder whether that old line isn't more applicable these days to Microsoft. The company has done a lackluster job of getting PC users fired up about its latest operating system, now a year old. It's that birthday that has me musing about all this. And how is the one-year-old faring? Well, it's really been getting slapped around lately. One online technology site called it one of the "top 10 terrible products" of all time. A trade magazine was a bit kinder, only calling it one of the "15 biggest tech disappointments of 2007." Still, as Steve Ballmer pointed out at CES, more than 100 million Vista licenses have been sold.

So, why is Vista like sushi? No, I don't equate it with cold, dead, raw fish. But I'm not someone who craves sushi. I'll eat it if it's well prepared, fresh and the only thing around. My overall attitude: It's not bad.

It's the same with Vista. If it's on a machine that has proper driver support, isn't loaded with junk applications and has a fast enough processor and graphics card, Vista's not bad. I'd choose something else if I could, and I certainly wouldn't go out of my way to use it.

This is the core of Microsoft's problem. Few consumers are buying PCs just so they can run Vista. Why should they? Operating systems are inherently boring, and Microsoft has failed to articulate sufficient reasons to make the switch.

The following should give you an idea of how badly Microsoft is doing at selling the benefits of Vista. I recently asked several Microsoft executives for three reasons why a consumer should move to the operating system. The first answer was always security. The second, if there was one, was something about the Vista experience. No one had a third reason. I finally asked another executive for just 10 words extolling Vista's benefits. Couldn't do five.

■ **I don't go out of my way to eat sushi, or to use Vista.**

There's just nothing in Vista that grabs my attention. Yes, it's more secure, but is security really a core selling point nowadays, or just table stakes? It has some compelling features. Vista's photo management is top-notch. But I can get it in XP, courtesy of Windows Live Photo Gallery.

Even though operating systems are boring, they can be compelling. Look at the buzz surrounding Apple's Mac OS Leopard. One thing Apple does is clearly point out new experiences enabled by the operating system. For example, with Leopard, you can take any part of any Web page and turn it into a desktop widget. You couldn't do that in Tiger. Time Machine is another standout feature. Are they enough to persuade someone to upgrade? Perhaps not, but that's not the point. The point is that the features are articulated strongly and clearly. It's what Microsoft hasn't done.

A recent shakeup in the Windows marketing group offers some hope. It might be too late for Vista, but the general shrug that has greeted it should fire up Microsoft to do more with the mysterious Windows 7 that's being touted all over the Internet. The vendor should also plan to keep XP around for a while, but that's a topic for another time. ■

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CROWD

SOURCING:

Are you ready to ask the world for answers?

When Constellation Energy Group Inc.'s commodities unit needed a new system recently, it considered the usual sources of labor: internal staffers, consultants, contractors, offshore programmers or a mix of all four. Instead, it turned to a less traditional approach: It asked programmers from all over the world to compete with one another to write the best code for the system. The goal was to get hundreds of programmers to labor over a system that will ultimately represent the work of fewer than 100 developers.

Welcome to the world of "crowdsourcing," defined by Jeff Howe, who maintains the Crowdsourcing.com blog, as "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call."

If this sounds a little far out, get used to it. Everywhere you look, companies are turning to a wide variety of crowdsourcing models to do everything from programming and market surveys to product development and R&D.

Thanks to the success of user-generated sites such as YouTube and Wikipedia, newly empowered consumers will increasingly demand a say in product development plans, says Jonathan Edwards, an analyst at Yankee Group Research Inc. in Boston. "Crowdsourcing is an easy way to satisfy consumers' demands to be heard and to get free feedback at very little expense that is impossible to get otherwise," he says.

Also compelling is the increasingly popular notion among companies that the best, most direct and cheapest sources of innovation could lie outside the corporate walls. "The focus of every company today is on innovation, which has led to an all-hands-on-deck mentality," Edwards says.

CROWDING AROUND A SYSTEM!

In Constellation Energy's case, the $19.3 billion Baltimore-based utility didn't stage a completely open call. It worked with TopCoder Inc., which holds regular coding competitions, ranks developers who compete and then makes them available to businesses that need systems built, also through a competition-based model. Glastonbury, Conn.-based TopCoder has about 130,000 members from more than 200 countries.

A TopCoder project manager assessed the needs of Constellation Energy's commodities group and broke the system design into dozens of small components. Constellation decided to build about 40% of the components in-house, and TopCoder released requirements for the rest to member developers, who then could send in their best coding efforts.

Submissions — which continue to roll in — are rated by members using a standardized scorecard, and winners are rewarded anywhere from $500 to close to $2,000. When all the components are complete, TopCoder will work with Constellation to integrate them into a functional system. "It's an incredible virtual workforce that is literally always on task," says Ken Allred, managing director of IT in Constellation Energy's commodities group. "It's almost like a sport, where people see each other as competitors, and that's what drives high-quality code."

TopCoder also uses a crowdsourcing model to compile a catalog of reusable Java and .Net components that it uses to supplement developer efforts. Its members compete to produce the best code for the catalog, and winners get paid royalties every time the code is reused. "It helps them to be cost-competitive and fast," Allred says.

FAST ANSWERS!

Development cycle time is very important to the Constellation Energy commodities group, which Allred says requires a high degree of agility and speed. Phase 1 of the company's system is complete and in test mode, and the entire project is about 65% done, he says. Ultimately, Allred expects to save both money and time using TopCoder's crowdsourcing approach. Even though the components still need to be assembled to create the final system — a step that wouldn't have to be taken using a traditional approach — Allred is confident that it will be about 50% faster.

Fast-moving businesses are exactly the types of companies for which crowdsourcing makes sense in systems development, says Carey Schwaber, an analyst at Forrester Research Inc. “They’re willing to take a risk using a different process, because the way they usually build is too slow,” she says.

Another less-quantifiable advantage, Allred says, is code quality. “Clearly, some of the people doing this are top guns who bang C# 18 hours a day, seven days a week,” he says. “Even our top developers have to sometimes say ‘wow.’ ”

And because the programmers are global, Allred says he is also finding that their outlooks differ from those of U.S. developers, enabling them to add “a perspective and approach that normally we wouldn’t have access to.”

CONCERNS ABOUT CROWDS!

There are those who worry that crowdsourcing programs could be exploited as sources of cheap labor. For instance, on iStock International Inc.’s iStockPhoto.com, companies can buy stock photography from amateur photographers for a fraction of what they’d pay a professional. But Howe says that contributors to iStockPhoto are thrilled to have their photos selected.

Allred points to some downsides of using crowdsourcing for systems development. For example, it can require additional staff training, he says. Allred had to create a role inside his IT group to handle the process of assembling the components into a finished product.

Schwaber agrees that questions remain about this development approach. “TopCoder has done a good job of providing visibility into the process, but it’s still exotic,” she says.

Companies should also take steps to protect proprietary information, says Allred. After breaking the system design into several hundred component pieces, his organization retained 250 components to design in-house because they required business logic that Constellation believes gives it a competitive advantage.

Intellectual property theft is another concern. Anyone who contributes an idea through a crowdsourcing platform has to be careful not to lose credit for it. Who’s to say that a company that doesn’t pick you as the “winner” won’t take your idea and run with it anyway?

InnoCentive Inc., a community-based problem-solving network, handles this by requiring participants to sign an agreement protecting confidential information, and it prevents third parties from seeing and stealing others’ ideas by allowing only the organization that posted the problem to see proposed solutions.

Despite the wrinkles, Edwards encourages companies to try different crowdsourcing approaches. “It’s a gray area, but that’s good because it enables companies to take on what they’re comfortable with,” he says. Particularly with increasingly competitive marketplaces, he adds, “you really have to try these things today.” ■

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CROWD CONTROL!

Crowdsourcing isn’t just for writing code or finding good products at discount prices. It’s also a source of customer input that can be used to drive product strategies. And that’s where you can get into trouble.

If you’re soliciting customers’ opinions, you can’t allow the inmates to run the asylum, says Jonathan Edwards, an analyst at Yankee Group.

“When you open the floodgates, anyone can talk about anything,” he says. “There may be people who don’t like the brand or are unhappy with the stock performance.”

To get around that, it’s a good idea to focus the discussion around one area and clearly define what you’re trying to achieve and what the community is all about. “The dialogue you get will only be as intelligent as the wisdom of the crowd,” he says.

And, Edwards says, be aware that participants may not be very diverse, trending toward the upscale, educated, technically savvy crowd. Companies need to be careful not to let these narrow groups have too much influence on their decision-making.

For example, he says, Dell Inc. has decided to install Linux on its PCs as a result of high demand for the open-source operating system on IdeaStorm.com, its crowdsourcing site. “The suggestion got multiple thousands of votes, but [Dell] had to be careful that it wasn’t just 10,000 Linux enthusiasts who don’t represent the mass market,” Edwards says. “You can’t let the crowd drive your entire product or service line.”

Some companies thin the firehose of ideas by creating private communities through systems from vendors such as Think Passenger Inc. and Leverage Software Inc. According to Edwards, Hewlett-Packard Co. and Salesforce.com Inc. are using Leverage Software tools to create private social networks for customer, partner and developer relationship-building, and they have turned to threaded discussion and poll functionality for information-gathering.

Other crowdsourcing models limit audience participation by natural selection. People who join InnoCentive’s “open innovation marketplace,” for instance, tend to be scientists, engineers, inventors and other experts, because they’re called upon to respond to highly complex challenges and can be rewarded up to $100,000. “It’s not your average crowd,” Edwards says.

– MARY BRANDEL

THE ‘IN’ CROWD!

Recent examples of crowdsourcing abound. Here are a few:

■ **Dell Inc.** invites users to post ideas and either promote or demote one another’s suggestions, through a system dubbed IdeaStorm. Highly rated ideas get pushed to the top of the site. Since IdeaStorm’s inception in February 2007, Dell has gone to market with more than 20 user-generated suggestions, according to Jonathan Edwards, an analyst at Yankee Group.

■ **Tesla Motors Inc.**, a San Carlos, Calif.-based start-up that’s working to build an all-electric sports car, recently asked readers of its blog to download a spreadsheet that it developed, fill in information related to their homes’ circuitry and electrical loads, and submit the resulting data, which will reveal their homes’ available and required amperage. The company will use this data to design its home car-charging stations.

■ **Netflix Inc.** has staged a contest for people to improve upon its current tool that predicts how much a viewer is going to like a given movie based on his stated preferences. Winners can earn up to $1 million.

– MARY BRANDEL

3.10.08

_INFRASTRUCTURE LOG

_DAY 74: This is so complicated. We're spending all our time and money managing our boxes. Gil says he has a big idea for how to better manage our x86 environment.

_Gil's big idea: sheepdogs...says they work for biscuits.

_DAY 75: I just wrangled up the scalable IBM System x3950. Its IBM X3 Architecture and IBM Systems Director make it one of the most reliable and economical platforms for x86-based virtualization. Managing our servers and storage is a snap. And with Dual-Core Intel® Xeon® processors, the System x™ servers will run lightning fast.

_IBM System x. My new best friend.

IBM®

Purchase a System x and get a 3-month trial of VMware® VI3*

IBM.COM/**TAKEBACKCONTROL**/VIRTUALIZE

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Slimmed-Down Servers

VistaPrint's second try at virtualization brings a hefty return on its investment. **By Stacy Collett**

100 PREMIER IT LEADERS 2008 **BEST IN CLASS** This story is the first in a series showcasing the best projects of this year's Premier 100 IT Leaders.

VistaPrint Ltd.

Hamilton, Bermuda-based VistaPrint is an online supplier of graphic design services and customized printed products. With 11 million customers, VistaPrint receives an average of 26,000 orders per day and ships to more than 120 countries. Fiscal 2007 revenue was $256 million.

IT CHAMPION: Chief Operating Officer Wendy Cebula

IT STAFF: 53

PROJECT PAYBACK: Swapped blade servers for virtual servers in its Bermuda data center, saving about $500,000 over three years. Moved Lexington, Mass., data center to Windsor, Ontario, where hydroelectric power saves $130,000 annually in energy costs.

IN LATE 2005, business was booming at VistaPrint Ltd., a graphic design and printing company. The firm was adding 100,000 customers each month — and growing at nearly 60% annually. But data center costs were growing exponentially too. VistaPrint's blade servers were eating up about 32,000 watts of power each month and required 9.1 tons of air conditioning to cool — a rate the company couldn't afford to sustain.

So to reduce costs and manage phenomenal growth, VistaPrint replaced relatively new blade servers with virtual servers in its Hamilton, Bermuda, data center, saving about $500,000 over three years and reducing energy use by 75%. It also moved some data center operations to Canada, where electricity and real estate prices are cheaper.

VistaPrint's data center project is a bold one, according to David Cappuccio, an analyst at Gartner Inc.

"VistaPrint took a pretty radical approach" with its sweeping change to virtualization technology over blade servers, he says. "People are thinking of these things, but nobody's going whole-hog right now. They're looking for a step approach."

By 2004, VistaPrint had purchased an arsenal of blade machines, but as the number of servers grew, the power pull became unmanageable, according to Aaron Branham, vice president of tech operations. The alternative — using 110 VMware instances and eight HP ProLiant DL 585 rack-mounted servers — would require 5,500 watts of power and just 1.6 tons of AC. "Swapping in the new servers in the Bermuda data center would mean investing more money [about $140,000], but we couldn't argue with the ROI," says Branham. The virtual machines were projected to save $450,000 over three years.

"The project overall wasn't so much a radical change as it was an embracing of existing technology," explains Wendy Cebula, VistaPrint's chief operating officer. "While we had been somewhat hesitant in the past about going with virtualization, Aaron and the tech-ops team made the case that it would be the best solution, especially in the long run. From there, I had to convince the rest of the management team of the same thing."

Problem was, VistaPrint had tried virtualization technology in the past, with poor results. "There were several issues — not enough memory in the boxes," for starters, Branham recalls. "They basically took a blade server and put four boxes on it. There wasn't enough memory, and it was swamping the disk."

Today, VistaPrint uses x64 technology and 32GB of memory in each DL 585 server. "When you do that, you can put 20 or 30 virtual servers on one physical box," Branham says. "Also, you really want to be connected to a SAN. That allows you to do virtualization where you can move live instances, which they didn't do previously. Make sure you also have the right RAID levels."

"The project overall wasn't so much a radical change as it was an embracing of existing technology.

WENDY CEBULA, CHIEF OPERATING OFFICER, VISTAPRINT

In another step to reduce energy and operating costs, VistaPrint decided to move its Lexington, Mass., data center and build a new one in Windsor, Ontario, where hydroelectric power — a renewable energy source — could lower electricity bills by another 70% when coupled with the new servers and virtualization software.

Branham's team plans to copy the Bermuda data center in Windsor and then work on the fail-over setup; he estimates that one data center will be able to switch over to another as a backup in less than two hours. ■

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3.10.08

_INFRASTRUCTURE LOG

_DAY 75: These cables are everywhere!! Connecting underutilized servers to more underutilized servers. Our energy usage is out of control!!

_DAY 77: I found a way out of this mess: the super-efficient IBM BladeCenter.® It helps us manage power and cooling usage with intelligent Cool Blue™ technology. And with the latest Quad-core Intel® Xeon® processor, we won't have to sacrifice performance for efficiency. So out with cables, in with blades.

_DAY 79: Gil's stuck under the ball. Tried calling his wife. Turns out the photo of his family came with the frame.

intel Xeon® inside™

Powerful. Efficient.

IBM®

IBM.COM/**OUTWITHCABLES**

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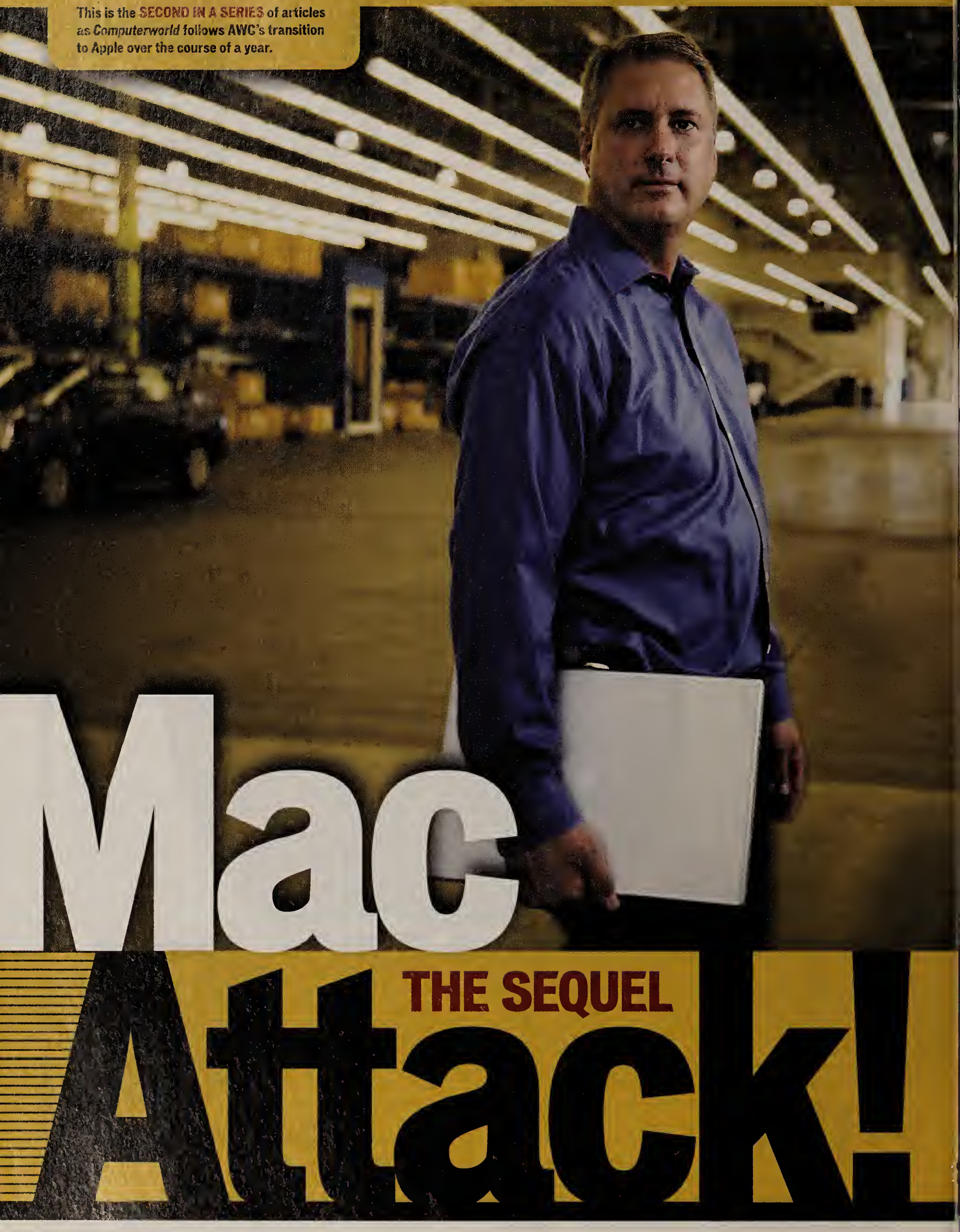
This is the **SECOND IN A SERIES** of articles as *Computerworld* follows AWC's transition to Apple over the course of a year.

Mac Attack!

THE SEQUEL



>>> "We never before had any of the workforce question our technological initiatives," says AWC CIO **DALE FRANTZ.**

PHOTOGRAPHY BY KEITH BROFSKY

Auto Warehousing Co.'s switch from PCs to Macs is proving more painful than expected.

By Julia King

HINDSIGHT, as they say, is always 20/20. Less than five months after going public with plans to immediately start replacing its Windows-based PCs with Macs, Auto Warehousing Co. was forced to push back the project by more than a month. That was last December. The reason was not a lack of money, manpower or executive support. Rather, what stymied the project were protests from workers and objections from customers who perceived the technology switch as unnecessarily costly.

"I didn't see this coming at all," says Dale Frantz, CIO of the Tacoma, Wash.-based company. "We never before had any of the workforce question our technological initiatives." But with the Mac project, "there was a perception that the equipment was much more expensive than traditional Windows PCs and that we were purchasing Lamborghini-level equipment with the company's profits," he says.

AWC's customers had similar concerns, raising questions about whether the technology migration might trigger increases in service rates.

In fact, Frantz says, within hours after a July 16, 2007, *Computerworld* story about AWC's technology migration plans was published, both he and CEO Stephen Seher received a flood of phone calls and e-mails with questions, positive and negative comments, and even an anonymous death threat.

> "I didn't see this coming at all.
>
> **DALE FRANTZ**, CIO, AUTO WAREHOUSING CO.

"Because of the breadth and scope of the project, our customers, workforce and financial institutions had a lot of questions," Frantz says.

Employees wanted to know whether money that could go toward salary increases or other benefits was being diverted to what they perceived as a pricey high-tech project. Customers worried that the cost of the project would be passed on to them. AWC's bankers wanted more details to determine whether switching to a new technology made sound business sense.

Customers' and suppliers' reactions didn't really surprise AWC Chief Financial Officer Dennis Matteo. His biggest surprise had come earlier, when Frantz first expressed a serious interest in switching to Apple technology.

"Dale is a very savvy CIO [and] was a committed Microsoft advocate. So when [he] started to look at Apple in a very serious way, it implied he had seen some fundamental changes in the business services direction of Microsoft and Apple," Matteo says. "Obviously, he likes the direction Apple is moving."

On all fronts, the concern was widespread enough that AWC executives decided to push back the rollout of the client computers and instead build support for the project.

FULL DISCLOSURE

As Frantz saw it, fully disclosing costs was the best way to do that. He spent the next month explaining to everyone who would be affected the many reasons for the technology swap. Among those is the more than $1.82 million the company calculates it will save over the next three years. That's what it would cost to upgrade software licenses if the company remained on PCs; in contrast, the total cost of switching to Macintoshes is $335,000. The real kicker, though, is that AWC would continue to do business on the upgraded software in the same way had always done business with the software already in place.

Frantz set up "town meetings" with about 450 workers on all three shifts and laid out the licensing math (see story, next page). "I talked about the fact that Microsoft requires up to five

From left, AWC senior programmer/analyst Robert Mullen, director of IS operations and software integration Mike Collison, and CIO Dale Frantz, with one of the new Macs.

PHOTOGRAPHY BY KEITH BROFSKY

Licensing Math

Microsoft's licensing scheme is anything but all-inclusive. That was the lesson AWC CIO Dale Frantz needed to get across to customers, suppliers and employees.

Using a Microsoft e-mail system as an example, Frantz explained that the user company first has to buy server hardware, then it must pay for Windows Server software and Exchange Server software. "And that just gives you your central Exchange e-mail server. That doesn't give you the right to attach to it," he notes.

For each e-mail user, you must also pay for a client access license, he says. If you have a user with cell-phone-enabled e-mail as well, you have to pay for two client-access licenses. "It doesn't take very much to see how your costs are huge just around a Microsoft e-mail system," he says.

The same applies to virtually all Microsoft products, Frantz says. "You buy a server, then you layer on SQL Server or Exchange Server, then you add on client access licenses, the numbers get huge very quickly," he says.

Here's what a typical AWC executive uses and what it costs under Microsoft:

Device	MS Office		MS Outlook
Office desktop	$371.40	+	$129.87
Home desktop	371.40	+	129.87
Travel laptop	371.40	+	129.87
E-mail-enabled cell			129.87
Totals:	$1,114.20	+	$519.48
Grand total per exec:			$1,633.68

In contrast, with Macs, when you buy the hardware, the software is included. "With Apple, the e-mail client is included on all Macs and on the iPhone, with no additional licensing of any kind," Frantz says.

This appeals to him because it makes costs more predictable and it makes software license management simpler and less expensive.

"Apple includes their full server suite of software in the price of every Xserve that you buy. Whether it's a file server, a wiki server or something else, you get their full server software suites included in the price of the Xserve. There's no additional software cost," Frantz notes.

Microsoft Vice President Margo Day says that what customers are paying for is the "seamlessness" of Microsoft's products. "Licensing costs are just one part of the equation," Day says. "As we look at how we engineer our products and how seamlessly they work together, we actually defray the cost that customers used to have to bear to get lots of software to work together or to work on different form factors. I would point to the cost avoidance you get in not having to integrate lots of systems together."

"There's no doubt that Apple's approach resonates with enterprise IT in that you buy it once and deploy it everywhere without getting into lots of individual additional license fees," says Michael Gartenberg, an analyst at JupiterResearch and a *Computerworld* columnist. In addition, Apple's simpler licensing scheme "comes at a time when Apple is very focused on being standards-based, and its clients are Intel-based. What that means is they can always run Windows," he says.

The bottom line, says Gartenberg: "We'll see a greater emphasis on Apple focusing on the enterprise in 2008."

– JULIA KING

client licenses for just one PC, just so we have the legitimate right to attach to the network. With Apple, that's all included," Frantz notes. "Yes, it looks like the equipment is more expensive — until you stack on all the client licenses to run Microsoft [software]."

According to Frantz, AWC workers are aware that 2008 is going to be a very tough year in the auto industry, given the housing crisis and a looming recession. Disclosing the licensing details to workers helped them understand that "we weren't [spending] millions of dollars on new computers when we could have instead put the money into employee benefits or their payroll," he says.

Frantz also brought a Mac to the shop floor and demonstrated AWC's main Vehicle Inventory Processing System (VIPS) on its 20-in. screen — which was noticeably larger than the existing 16- and 17-in. PC screens. And he demonstrated the iChat feature in the Mac OS X operating system. Using iChat, an AWC tech-support staffer took remote control of the Mac on the shop floor to show how computer problems there could be quickly fixed by an IT person located remotely. "That was a real 'wow' factor," Frantz says.

But not everyone was sold.

"We knew we were going down an entirely new road," Frantz says, "but we didn't anticipate the huge emotional response that we got back."

"People are passionate on both sides of the aisle," he says. "There's a lot of talk about the cult of Macs, but there's just as strongly a cult of Microsoft. It's just not as widely publicized."

Continued on page 34

For you, it's a problem you didn't see coming.

For your business, it's a customer you won't see coming back.

You can't anticipate every problem. But Emerson Network Power and its Liebert power and cooling technologies can help you create an IT infrastructure that is ready for anything—unplanned outages, unpredictable growth or unexpected technologies.

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From Skeptic To Believer

Brad Wieland is facilities and project manager at AWC, and his first reaction to CIO Dale Frantz's Mac plan was "quite a bit of skepticism," he says.

First, there was the cost: "I had financial concerns, because one of my responsibilities at the Tacoma facility is to keep costs down," he says.

AWC had completed upgrading all of its Windows 95 machines to Windows XP machines over the previous three to four years. "My initial thought was, 'Why spend all of this money when we just upgraded to new computers?' " Wieland says. "This was not a cost savings in my mind.

"But once Dale explained to me all of the savings on the back end, it really began to make sense," he says.

Wieland also had productivity concerns, however. "I am a Windows person through and through," he says. "I know how to tweak things on a Windows machine.

"There was also a bit of fear of the unknown," Wieland admits.

But those concerns have largely abated since he began working on a Mac laptop a little more than a month ago.

It's an interim machine to replace a PC that died, he says. He will get a Mac of his own shortly. "Things are much more user-friendly on the Mac," he says of the office productivity applications.

He has also seen a demo of the company's main VIPS application running on a Mac in the warehouse. It will be up and running on his Mac laptop once he receives it. VIPS "looks almost identical, but it seems to work a lot quicker," he says. "There is not as much of a delay time when you hit the Search button."

Overall, Wieland says, he is about 75% sold on the switch to Apple, "which is a lot better than a month ago."

What would it take to make him a full-blown, true-blue Apple convert?

"Once I get a laptop that is mine and I can customize it the way that I want to," Wieland says. "I'm even kind of thinking about a Mac for my next home computer."

– JULIA KING

Continued from page 32

A few key people were very anti-Apple, though they couldn't articulate why. "They just didn't want to switch," Frantz says.

Executives and IT staffers worked with the dissenters to win them over.

On the customer front, Frantz met one on one with various port managers and manufacturers' representatives in Tacoma and Detroit, again explaining the licensing math. "Customers just wanted to know how this was going to affect their rates," he says. He showed them that switching to Macs would result in lowering AWC's costs, which over time would result in lower rates.

Frantz says AWC had calculated "significant savings" associated with migrating to Apple software during the proof-of-concept testing last summer. "We knew we would have sufficient ROI for the change based on some broad generalizations, and the savings were enough to green-light the project," he says. But the real focus of the early testing was to make sure VIPS could continue to run on Microsoft SQL Server on the back end with Macs on the client side. "The SQL server runs well; it's a solid product. There's no business case to change that," Frantz says.

MOVING AHEAD

Once the interoperability issue was resolved, Frantz's team began integrating Apple servers into AWC's Windows-based network. As of Feb. 1, of a total of 40 non-SQL servers that will ultimately be converted to Mac servers, 14 had been changed over. The remainder will be swapped out according to AWC's three-year equipment-refresh schedule.

AWC has also finished migrating from Microsoft's Active Directory to Apple's Open Directory for controlling the network. This is especially significant, Frantz says, because the controlling operating system architecture determines licensing costs.

"By getting off of Microsoft Active Directory and onto Open Directory, each individual server becomes separate and Microsoft can no longer view [and charge for] a broad enterprise network. This was a very significant change," Frantz says.

AWC has completed migrating to a Mac OS X mail server and is currently migrating users from Exchange to Mac OS X's Mail application. "This requires a little bit more [time and effort], because we have to convert each user's mailbox, one at a time, making sure that all folders and calendar items import properly," he explains. The project is about 50% completed.

> **"My initial thought was, 'Why spend all of this money when we just upgraded to new computers?'**
>
> [illegible]

AWC's in-house IT team has been working alongside five consultants from Apple's professional services unit to work through networking, security and other engineering issues, Frantz says.

Running two different mail systems in parallel is especially complicated. "We didn't want to do a wholesale swap in a weekend, because that would require getting IT people to every facility to help assist users with the migration, and that wasn't possible," Frantz explains.

Working with the Apple consultants, Frantz says, AWC's network administrator devised an "elegant solution" to continue using a single mail domain, even though the users are temporarily on two different mail platforms.

On the client side, AWC has so far installed 25 of 28 Macs to run its mainstay VIPS application on the shop floor at its Tacoma facility. The other three clients remain on PCs because the Macs don't fit into the weatherproof cabinets on AWC's outdoor lots — "a little pain point" that's being resolved, Frantz says.

By December of this year, all VIPS client software will have been rewritten from PowerBuilder to Java 6.0 so it can run at the front end on Macs. The rewriting project is about 10% complete at this point, Frantz says.

Over the next year, "we'll upgrade to Macs on a shop-by-shop basis, because it doesn't make sense to sunset brand-new PCs," Frantz says. He estimates that by 2010, all 28 of AWC's facilities will be completely switched over to Apple technology. By then, all remaining PCs will be fully depreciated and will be able to be cost-effectively replaced with Macs. ■

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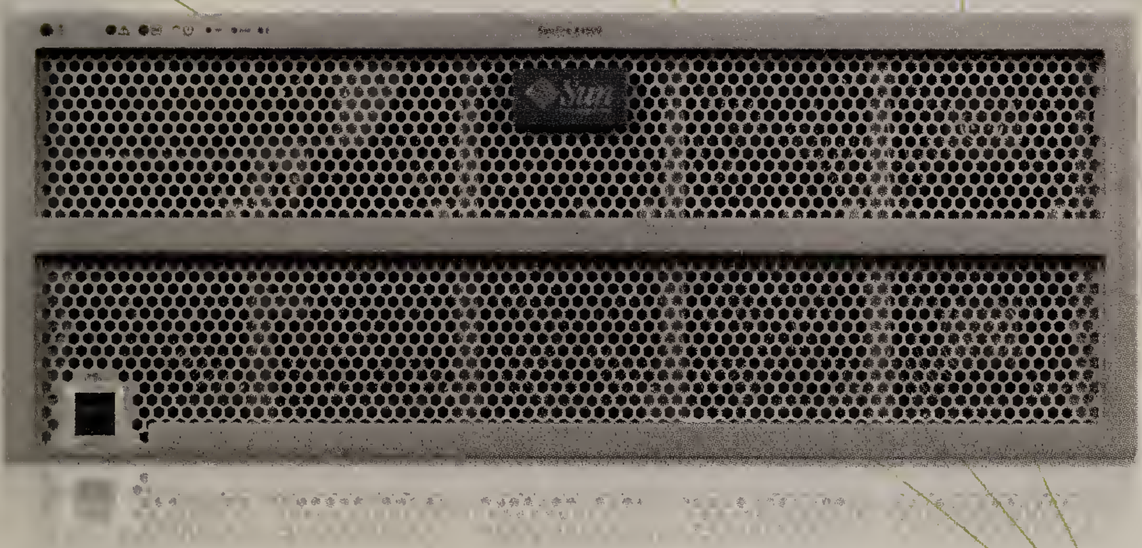

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Metrics as Tools Of Persuasion

It's always **a good idea** to review what **information** your CIO is getting from your **quarterly reports.**

Trouble Ticket

ISSUE: The CIO's understanding of the company's security posture comes from the metrics provided each quarter.

ACTION PLAN: Take the time to review the metrics whenever possible.

THE BEST way for my company's CIO to know details of our information security posture is for him to receive meaningful metrics in the quarterly IT scorecard. The information security metrics are my responsibility. Whenever I can, I like to review what I am gathering — and, therefore, what I am telling the CIO about our security strengths and weaknesses.

I had such a chance over the past two weeks. One thing I want to be sure of is that my metrics aren't met with a "So what?" I also purposely keep them to just a handful. The CIO and other IT managers don't want to be deluged with data, and my experience has been that CIOs don't care about things like how many port scans the intrusion-detection system (IDS) has uncovered. Our CIO wants to be aware of the company's susceptibility, and I want him to be able to judge the return on investment for our security infrastructure.

But if I had to narrow it down to one security thing that the CIO really wants to know about, I'd say it's viruses and our susceptibility to a virus attack. Why? Because a virus attack takes up hours of IT resources and makes the IT department look bad.

I had been reporting on patch and virus compliance only for desktops. In this review of the metrics, though, I decided to add Unix and Windows servers. The report on patch compliance will now read, "Percentage of managed systems that have required patches installed, per policy," and it will break down into three categories: desktops, Windows servers and Unix servers. That will show rather dramatically how weak we are in Unix patch compliance. Our Unix environment is very fragile, and attempts to install patches often lead to problems with applications.

The one security thing our CIO really wants to know about is viruses.

The next metric also focuses on viruses, reporting on the percentage of managed desktops and servers with the latest virus engine and pattern file. I am sure that our CIO is aware that there is a direct correlation between the lack of an updated pattern file and virus incidents.

BEYOND VIRUSES

From there, the metrics will shift to report on our ability to effectively monitor the network for unauthorized activity. Our CIO shelled out more than $100,000 for our IDS deployment, and I want to make sure he knows that what we got for that money falls short of 100% coverage. Therefore, I will be sending him reports on the percentage of external access points covered by the IDS and on the percentage of time we spend analyzing data for each sensor.

My thinking is that we need to monitor all of our external access points and not leave holes or opportunities for attack. I also believe that if no one is monitoring the IDS data, then all we have is an investigative tool. Sure, an investigative tool is better than nothing, but it just makes sense that if we have an IDS in place, a certain amount of time per day should be spent analyzing the data and responding to events. Luckily, the analysts keep track of how much time they spend on various tasks during the day, so I can easily obtain the metrics I need.

Finally, I will be using the metrics to keep track of compliance by the company's many partners. Whether a partner is developing source code or providing help desk support, it's important that it abide by the security controls spelled out in its contract. We've had partners that introduced malicious code into our network and others who stole our intellectual property, so tracking their compliance with those security controls is important.

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All in all, I'm happy with these improvements to the metrics, but I'll still be thinking about new ways to fine-tune them. ■

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

OPINION

Paul Glen

Why Decisions Don't Stick

OVER THE YEARS, I've seen lots of policy decisions fail to be transformed into reality. One interesting facet of the failures is that there seems to be relatively little relationship between the quality of the policy and the likelihood that it will be effectively implemented. Good ideas seem to be almost as difficult to implement as bad ones.

But if the quality of the policy isn't highly correlated with the level of resistance, what is?

I've noticed that there is a moment in every policy implementation that seems critical to success or failure — to whether people see a new policy as good or bad, and to whether they will support a decision or resist it. That's the moment of the public announcement. If it's done well, people tend to go along. If not, it's all over before anything begins. Heels dig in, and the battle of wills starts. (Of course, if a policy is truly odious, the best announcement won't help. But most decisions are neither magical nor malignant.)

I've also noticed a pattern of how these announcements go wrong. There are four basic types of failures.

1. No one finds out. Surprisingly, managers don't always tell the staff about their decisions. This may sound funny, but it's possible for a group of managers to get together, debate an important topic, come to a conclusion and just assume that everyone knows what to do next. No one outside of the room will ever find out because it was never anyone's responsibility to tell the staff. And the initiative will die of neglect. This is just poor planning.

2. Replay. In this version, a decision is made and announced, but then it's debated all over again by the people affected. It is neither accepted nor rejected, but taken as a proposal rather than as a policy. Here, the announcement fails to offer a compelling narrative to the staff. They may understand the content of the decision, but it isn't persuasive. So the debate that the management team had plays out all over again around the water cooler. And there, the proposal dies, is modified or — occasionally — is accepted.

■ Good ideas seem to be almost as difficult to implement as bad ones.

3. No-op. Here, a decision is made and announced, but the employees affected either ignore or resist it. It's like a no-op instruction in assembly language. Everyone files out of the meeting room and just goes back to work as if nothing has happened. This is probably the most common failure mode. The problem is that, for one reason or another, the manager announcing the policy lacks the necessary credibility. The decision itself may seem too big for him to make, or the announcer may simply not have the respect of the staff.

4. Excessive paternalism. And finally, a decision is made and announced, but decision-makers provide very little information, in a misguided attempt to protect employees from the messy politics of the organization. Sometimes this is a precursor to Failure Modes 2 and 3, but it has its own dynamic. When people don't understand the reasoning behind a decision, they will often make up conspiracy theories about what is really going on. This ends up wasting time and convincing the staff that management is hiding something. Even an ugly truth is usually better than nothing at all.

If you want to implement change in your organization, don't just think about what changes to make. Spend some time thinking about how you're going to announce it, and get people on board to implement it. If you think about each failure mode while planning an announcement, you can anticipate and avoid many of the most common sources of resistance. ■

Paul Glen *is the founder of the GeekLeaders.com Web community and author of the award-winning book* Leading Geeks: How to Manage and Lead People Who Deliver Technology *(Jossey-Bass, 2003). You can contact him at info@paulglen.com.*

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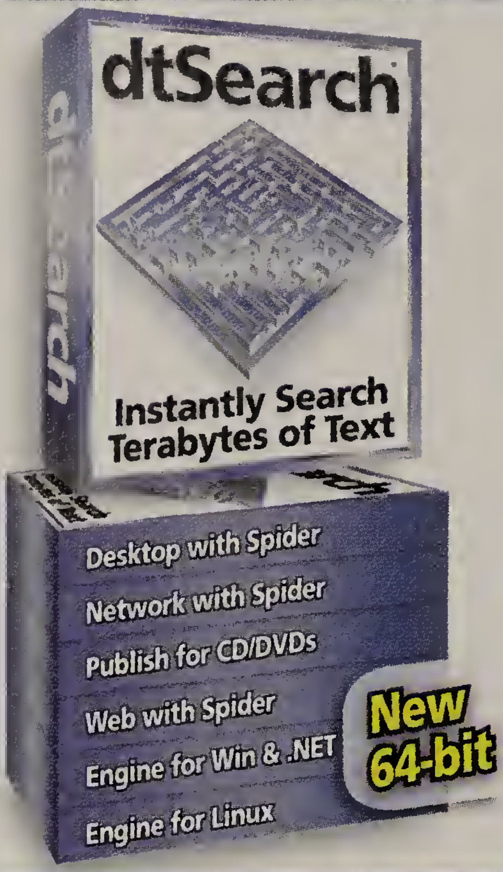

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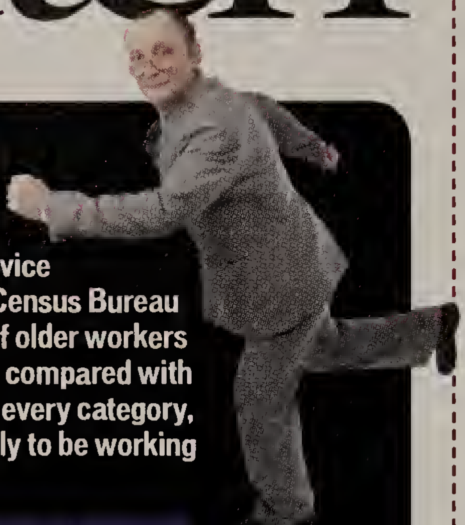
Career Watch



You'll Have to Push Them Out the Door

The Congressional Research Service has reported data from the U.S. Census Bureau that shows a larger percentage of older workers are staying in the workforce now compared with about 10 years ago. Moreover, in every category, the older workers were more likely to be working full time than they were in 1995.

STAYING IN WORKFORCE	1995	2007
Men 62 to 64	43%	49%
Men 65 to 69	27%	33%
Women 62 to 64	32%	42%
Women 65 to 69	17%	26%

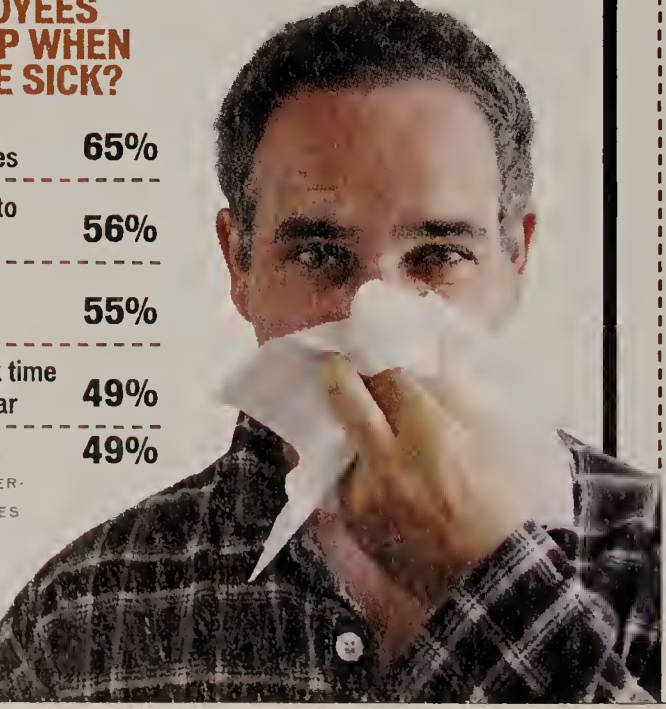
Don't Just Say, 'GESUNDHEIT.' Say, 'GO HOME!'

Forty percent of organizations say they discourage sick workers from coming to the office by educating employees on the importance of staying home when they're ill. But it's advice that's often ignored, resulting in a phenomenon known as "presenteeism" – when sick workers come to work but can't perform at their usual level and endanger the health of co-workers.

WHY DO YOUR EMPLOYEES SHOW UP WHEN THEY'RE SICK?

Heavy workloads and tight deadlines	65%
No one available to cover workload	56%
Don't want to use vacation time	55%
Want to save sick time for later in the year	49%
Fear of discipline	49%

SOURCE HARRIS INTERACTIVE INC POLL OF 317 HUMAN RESOURCES EXECUTIVES FROM U S ORGANIZATIONS, JUNE 28-JULY 17, 2007 SPONSORED BY CCH INC., RIVERWOODS, ILL



PAGE COMPILED BY JAMIE ECKLE.

Q&A

Katherine Spencer Lee

The **executive director** of Robert Half Technology talks about **rising salaries** for **entry-level IT** positions.

What sorts of numbers have you seen? In the 2008 Robert Half Technology Salary Guide, the projected increase in average starting salaries for the 61 U.S. IT titles that we track is 5.3%. This compares to a projected increase of 2.8% last year.

We are seeing highest demand from our clients in application development, Web development, network administration, database administration/management and technical support.

For specific titles we track in the salary guide, some of those highest in demand are lead application developer, messaging administrator, network manager, IT auditor, business intelligence analyst and data modeler, all expected to command base compensation rises 6% to 7% higher than 2007 projections.

Specifically regarding entry-level positions, the salary guide projects growth slightly better than average for Tiers 1 through 3 help desk positions. Networking and the help desk can be good spots for a young college graduate to learn more about technology and customer service and are often great places to start an IT career.

Are companies finding it easier to staff their help desks? Not necessarily. A recent Robert Half survey (*http://tinyurl.com/2p2qep*) found that CIOs felt that their IT support function was understaffed by 40% on average. Part of that shortage is indicative of the difficulty companies face in locating enough skilled IT professionals, at entry level or otherwise.

Another of our surveys, from last year, indicated that it takes nearly two months to hire IT staff positions and nearly three months to fill manager-level positions.

56 DAYS **Mean response when CIOs were asked, "How long does it take, on average, to fill a full-time staff-level position within your IT department?"**

87 DAYS **Mean response when executives were asked, "How long does it take, on average, to fill a full-time manager-level position within your IT department?"**

SOURCE: ROBERT HALF TECHNOLOGY SEE THE FULL SURVEY RESULTS AT HTTP://TINYURL.COM/2BGZM3

Are organizations mostly hiring computer science graduates, or people with other backgrounds? It is indeed common for companies to recruit and hire from computer science, engineering or information systems programs. But that doesn't seem to be the only place. As IT crosses into more diverse areas of the business today – marketing, customer service, operations, sales, etc. – it's increasingly important that IT professionals have a broad range of skills. Clients tell us that IT professionals who can combine IT skills with business acumen are most desirable.

Still, a recent Robert Half Technology survey of 1,400 CIOs revealed that, compared to five years ago, they are 25% less likely to fill open IT staff positions with candidates who have nontechnical degrees – that is, degrees other than information systems, computer science or engineering.

– JAMIE ECKLE

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TRUE TALES OF IT LIFE AS TOLD TO SHARKY

That'll Stop 'Em

Auditors advise a bank's CIO to add an "authorization warning" – a message that that will show up on all PCs before log-on warning unauthorized users to stay away – and this IT pilot fish is tasked to whip it up. "I quickly threw it together and tested it on our IT group," fish says. "The test was successful, but rather than disabling it, I left it up, assuming only our department would see the message. However, I accidentally linked it to the entire domain. Not so bad, right?" Probably not, except that fish was having fun when he composed the test message: "USE THIS COMPUTER AND YOU WILL DIE." Sighs fish, "Needless to say, when hundreds of users were rebooting for the night, they freaked out and blew up our cell phones fearing the Reaper."

Old Habits Die Hard

User calls help desk pilot fish with a complaint: There are too many choices. "She has a default printer named 16 and she wanted to print to 66, which was also in her printer list," explains the pilot fish who takes the call. "She has recently moved locations, so another printer was added to hers in case 16 wasn't available, which was 28. So she called us wanting to know if there was some way to change the order the printers appeared because *before* she could just press her down arrow, and 66 would be the next printer. Now she has to press her down arrow *twice* to skip over 28 to get to 66. That's too much work?"

Concierge Service

This pilot fish provides general support for users in two departments of a big organization and can handle most of them without trouble. Then there's the exception. "One user has what can only be described as extraordinary computer skills – for 20 years ago," says fish. "These days, a dedicated intern takes care of most of the problems this user experiences, such as 'My e-mail isn't working' – intern connects network cable – or 'It's not printing' – intern adds paper. On days when the intern isn't around, I get calls like the one this morning: 'I put this CD in, and it's just grinding around making a funny noise.' A quick walk down the hall and a few nanoseconds of troubleshooting later, I turned the CD label-side up. Mission accomplished!"

Aha!

User replaces a noisy old workhorse dot-matrix printer with a quieter ink-jet model – and soon calls this IT pilot fish with a complaint. "He wanted to know why it wouldn't print the carbon copy," fish says. "I replied, 'It can't spit the ink out that hard' – then watched the light in his brain come on."

■ *Light up Sharky's brain by sending me your true tale of IT life at sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.*

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FRANKLY SPEAKING

Frank Hayes

Internet Sabotage

SABOTAGE. That's the right word for what Pakistan Telecom did to YouTube on the last Sunday in February. It was intended to be censorship — blocking Pakistanis from seeing a video that their government found offensive. But it resulted in all of YouTube vanishing from the Internet for up to two hours.

If you think that's merely another silly non-crisis that doesn't mean anything to your IT shop or business, think again.

What happened? Pakistan Telecom (PT) got instructions from a government agency to block a specific YouTube video, which reportedly included the cartoons of the Prophet Muhammad that have sparked periodic riots since they were first published in Denmark in September 2005.

To do that, PT used a Border Gateway Protocol (BGP) injection. Put simply, PT changed its Internet routing information for YouTube so that requests would go to PT's servers, not YouTube's. But the changed information was also sent to PT's own Internet provider, Hong Kong's PCCW, which accepted it and passed it along to the rest of the world. Almost immediately, YouTube disappeared — for nearly everyone.

According to Renesys, an Internet monitoring consultancy, it took about two minutes for the bad routing information to spread, 80 minutes for YouTube to notice and send out corrected routing information, and about another hour before the mess was completely cleaned up.

Yeah, it was clumsy and irresponsible on PT's part. But stop smirking. It could happen again tomorrow — to you.

See, the problem that allows BGP injection hasn't been fixed. And it's not likely to be. Ever. Just as it wasn't fixed two years ago, after Con Edison Communications accidentally hijacked Internet connections to investment houses, a bank, Martha Stewart's publishing empire and the New York *Daily News*. Or after Turkish network provider TTnet mistakenly rerouted the entire Internet on Christmas Eve 2004.

You can't stop it. You can detect it and repair the damage, but meanwhile, you'll have vanished from the Internet.

Those are big incidents. Smaller BGP injections happen all the time — often by accident, but sometimes because spammers or other bad guys want to hijack an address. As governments keep attempting to censor Web sites, that kind of sabotage is likely to happen more and more.

Why? Because for all the security we've layered onto the Internet, at the level of big network providers, it still runs on pure trust. When one of them sends out routing information to the others, it's presumed to be true.

So, like YouTube, you could find your domain name hijacked, accidentally or intentionally, at almost any time.

You can't stop it. If you're watching for it, you can detect it and act to repair the damage. But meanwhile, like YouTube, you'll have vanished from the Internet — and somebody else will be getting all your traffic.

How badly will that kind of sabotage hurt your company's business?

How many orders and inquiries won't come in?

How much proprietary information from customers will go to the hijackers instead of to you?

How will your supply chain be disrupted? Your sales force automation? Your software-as-a-service applications?

In short, how heavily do you rely on the Internet? And what are your plans for the day it's stolen out from under you?

Nothing silly about those questions, is there?

No one is going to eliminate BGP injections anytime soon. And if you're not prepared — with monitoring, encryption, VPNs and alternative routes for critical communications — you'd better get to work.

Or you could find out just what the word *sabotage* means to you. ■

Frank Hayes *is* Computerworld*'s senior news columnist. Contact him at frank_hayes@computerworld.com.*

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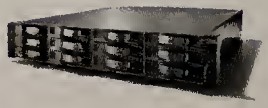

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